New England Common Assessment Program

Student Practice Test Booklet

Grade 8

Mathematics

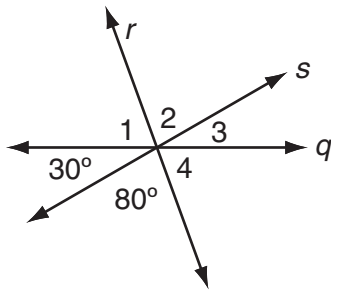
Student Name: _____

School Name: _____

Mathematics—Session 1 (Non-Calculator)

Answer questions 1 through 4 on page 2.

1 In the diagram below, lines r, s, and q intersect at one point.



What is the sum of the measures of $\angle 3$ and $\angle 4$?

A. 90°
B. 95°
C. 100°
D. 110°

2 Look at this pattern.

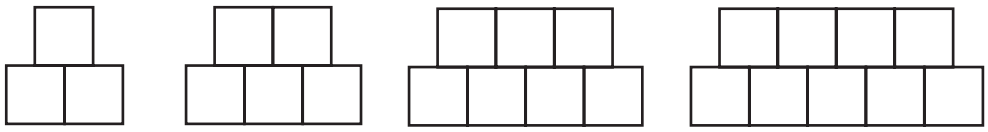


Figure 1 **Figure 2** **Figure 3** **Figure 4**

Which expression represents the number of boxes used to make Figure 99?

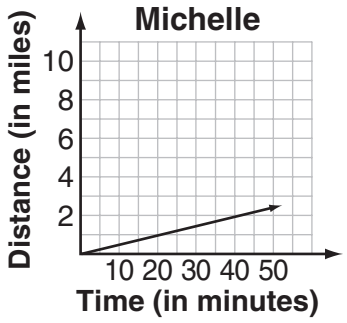
A. 99 + 98
B. 99 + 1 + 99 + 1
C. 2 × 99
D. 99 + (99 + 1)

GO ON

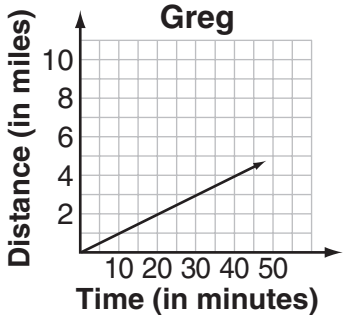
❸ Four students rode to school on their bikes. The distance that each student traveled over time was graphed.

Which graph represents the student who rode fastest?

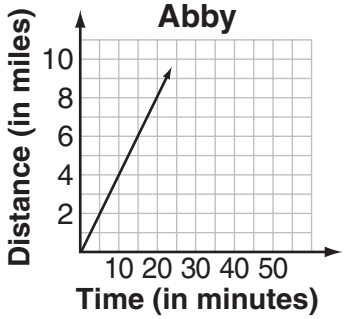
A.



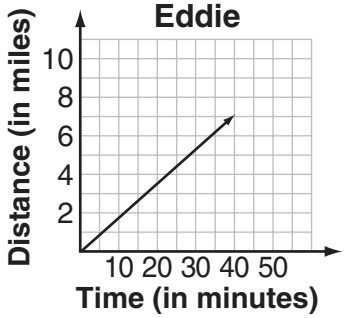
B.



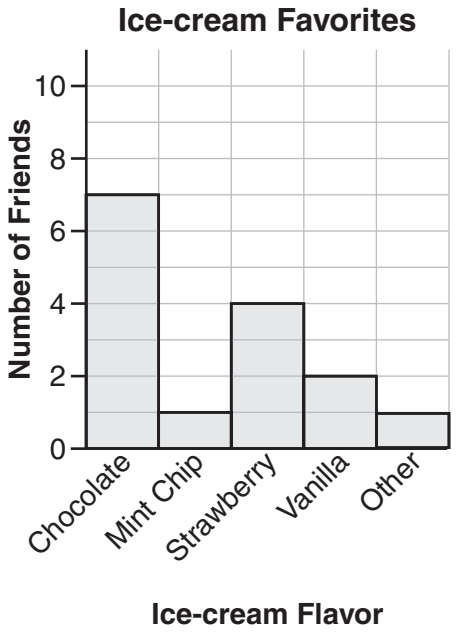
C.



D.



❹ Shelby asked 15 friends to name their favorite ice-cream flavor.



If Shelby chooses one of her friends at random, what is the probability that this friend's favorite flavor is either strawberry or vanilla?

A. $\frac{1}{3}$

B. $\frac{2}{5}$

C. $\frac{8}{15}$

D. $\frac{11}{15}$

GO ON

Answer question 5 on page 2.

5 Andrea has $20 in her savings account. She will add $3 per week to her savings account for n weeks. Write an algebraic expression to show the total amount of money Andrea will have in her savings account after n weeks.

Answer question 6 on page 2.

6 Anna and Barb practiced serving a volleyball over the net.

- Anna served the ball over the net 18 out of 25 times.
- Barb served the ball over the net 75% of the time.

Use fractions, decimals, or percents to show or explain which girl had the greater rate of success in serving the ball over the net.

Answer question 7 on page 2.

7 Sean and Barry are participating in a 30-mile bike race. Sean averages 20 miles per hour and Barry averages 15 miles per hour. How many miles will Barry be from the finish line when Sean finishes the race? Show your work or explain how you know.

DO NOT GO ON. STOP

Answer questions 8 through 11 on page 3.

8 Look at these advertisements.

Which two sneakers have the same rate of discount?

A. Jump High and Run Fast
B. Jump High and Walk a Mile
C. Air Flight and Walk a Mile
D. Air Flight and Run Fast

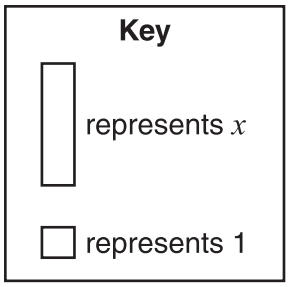
9 Look at this table.

Team	Wins	Losses	Total Games
Birds	10	5	15
Mantas	15	5	20
Sharks	12	12	24
Tigers	16	8	24

Which team has the greatest **percent** of wins?

A. Birds
B. Mantas
C. Sharks
D. Tigers

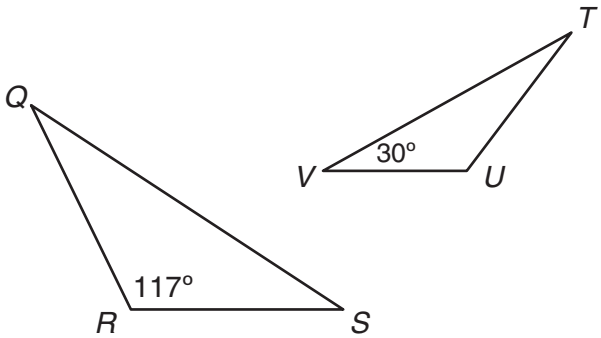
10 Look at this model.



Which expression is shown by the model?

A. $5x$
B. $3x^2$
C. $3x+2$
D. x^3+2

11 Triangle QRS ~ triangle TUV.



What is the measure of $\angle Q$ and the measure of $\angle S$?

A. m$\angle Q$ = 33° and m$\angle S$ = 30°
B. m$\angle Q$ = 30° and m$\angle S$ = 30°
C. m$\angle Q$ = 30° and m$\angle S$ = 33°
D. m$\angle Q$ = 23° and m$\angle S$ = 30°

GO ON

Answer question 12 on page 3.

12 Write four **different** numbers for which both of these statements are true.

- The range is 8.
- The mean and median are the same number.

Answer question 13 on page 3.

13 A scientist recorded the growth of a certain bacteria in the table below.

Time Elapsed (in minutes)	Number of Bacteria
0	26
15	52
30	104
45	208
60	416

a. What is the number of bacteria when the time elapsed is 75 minutes?

b. Explain the relationship between the time elapsed and the number of bacteria.

c. What is the number of bacteria when the time elapsed is two hours? Show your work or explain how you know.

STOP


Measured
Progress